



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,984	02/20/2002	Bahir Al-Obaidy	CUNANT 1398US	2677
20210	7590	11/04/2005		
DAVIS & BUJOLD, P.L.L.C. FOURTH FLOOR 500 N. COMMERCIAL STREET MANCHESTER, NH 03101-1151			EXAMINER MEW, KEVIN D	
			ART UNIT 2664	PAPER NUMBER

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,984

Applicant(s)

AL-OBAIDY ET AL.

Examiner

Kevin Mew

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/20/2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Drawings

1. The drawings are objected to because Figs. 1 and 2 of the drawings lack descriptive labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because the term “synchronise” should be replaced with “synchronized” and the term “centralised” should be replaced with “synchronized.” Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claims 58, 64 are objected to because of the following informalities:

In claim 58, line 3, replace the spelling of the term "centralised" to "centralized."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 56, 63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 56, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 63, the phrase "for example" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

5. Claim 64 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 33-35, 37-39, 41-50, 52, 55, 58-59, 61-64 are rejected under 35 U.S.C. 102(e) as being anticipated by the prior art, Argyroudis (USP 5,892,758).

Regarding claim 33, Argyroudis discloses a remotely interactive metering system (element 100, remote metering system, Fig. 1) comprising:

sensing mechanism (a tampering and power consumption sensing mechanism for sensing utility service data such as electromechanical power consumption monitor, col. 4, lines 35-58 and col. 10, lines 21-50, col. 11, lines 61-67, col. 12, lines 1-13, and elements 238, 204, Fig. 2) for interfacing with a meter (remote metering unit, col. 4, lines 35-58) and providing an output signal corresponding to the meter reading (generating a digital signal in response to the meter measurement, col. 10, lines 21-50);

a meter reading collection hub (a combined system of elements 132, 134, 122, 136, 118, 104, 106, 108, 110, 102a-102n, Fig. 1) connecting to the sensing mechanism of several meters (connecting to the reading interface of the remote metering units 102a-102n, Fig. 1), the meter collection hub comprising:

mechanism for converting the output signal from each sensing mechanism (the reading interface 204 transforms light signal corresponding to each revolution of the rotating

disk of the measurement device into an analog electric pulse, col. 10, lines 21-50, and elements 238, 204, Fig. 2) and providing a count for each meter associated with each one of the mechanisms (indicating a number of revolutions of the rotating disk of the measurement device of the meter, col. 10, lines 21-50);

telecommunication mechanism by which data may be transmitted (utility service consumption and other reporting messages are transmitted to central controller from remote metering units via the MSTO 110, col. 5, lines 7-31) from the meter reading collection hub (a combined system of elements 132, 134, 122, 136, 118, 104, 106, 108, 110, Fig. 1) to a centralized meter reading server (central controller, element 116, Fig. 1); and

communication mechanism by which the meter reading collection hub may receive real time, time signals (provides real-time reading of remote metering devices, col. 17, lines 39-43); and

a centralized meter reading server (central controller, element 116, Fig. 1).

Regarding claim 34, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein a plurality of meter reading collection hubs (a combined system of elements 132, 134, 122, 136, 118, 104, 106, 108, 110, 102a-102n, Fig. 1) are connected to the centralized meter reading service (are connected to the central controller) by telecommunications mechanism (wirelessly in a TDMA or CDMA communications environment, Fig. 1).

Regarding claim 35, Argyroudis discloses the remotely inactive metering system according to claim 33, wherein the sensor mechanism is an integral part of the meter (a mechanism for sensing utility service data such as electromechanical power consumption monitor is an integral part of the remote metering unit, col. 4, lines 35-58 and col. 10, lines 21-50, col. 11, lines 61-67, col. 12, lines 1-13, and elements 238, 204, Fig. 2).

Regarding claim 37, Argyroudis discloses the remotely interactive metering system according to claim 35, wherein the sensor mechanism (reading interface 204, Fig. 2) is situated within easy sensing distance from a rotating disc of the meter (reading interface is coupling to the rotating disk of the measurement device, col. 10, lines 21-50 and elements 204, 206a, Fig. 2).

Regarding claim 38, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the meter reading collection hub is connected to an external terminal of the meter (user terminal 132 of the collection hub is connected to an external terminal of the remote metering unit 102, Fig. 1).

Regarding claim 39, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the sensor mechanism senses LED signaling from an LED meter display (reading interface mechanism reads a light pulse for every revolution of the rotating disk of the measurement device, col. 10, lines 21-50).

Regarding claim 41, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the sensors connected to the meter reading collection hub are meters for different utilities of a single premise (remote metering units 102a-102n are sensors for remotely monitoring and reading water, gas, and electrical power services, col. 4, lines 35-58) and/or meters for the same utility of several neighboring premises.

Regarding claim 42, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein multiplexing mechanism is provided between the sensing mechanism and the meter reading collection hub, to increase the number of sensing mechanisms which may be connected to the meter reading collection hub (TDMA or CDMA multiple access mechanism is provided between the remote metering units 102a-102n and the combined system of elements 132, 134, 122, 136, 118, 104, 106, 108, 110, Fig. 1).

Regarding claim 43, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the meter reading collection hub utilizes digital decimal odometers (remote metering units) to convert the signals from the sensing mechanism into unit counts (measures the number of revolution of rotating disk of the measurement device and converts the light pulses from the reading interface into analog electrical pulses, col. 10, lines 21-50).

Regarding claim 44, Argyroudis discloses the remotely interactive metering system according to claim 42, wherein the digital decimal odometers are coupled to display dials to

provide a visual display (remote metering units are coupled to home base unit HBU 122 for displaying information, col. 6, lines 41-50).

Regarding claim 45, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the meter reading collection hub (the collection hub comprising elements 132, 134, 122, 136, 118, 104, 106, 108, 110, 102a-102n, Fig. 1) comprises mechanisms for recording the readings and storing them temporarily (the remote metering unit of the collection hub comprises mechanisms for recording the meter readings and storing them temporarily, col. 10, lines 21-50), for subsequent transmission via telecommunication system to the centralized meter reading server (for subsequent transmission to the central controller, col. 10, lines 51-58).

Regarding claim 46, Argyroudis discloses the remotely interactive metering system according to claim 45, wherein the meter reading collection hub (remote metering unit of the collection hub) is provided with processing mechanisms to calculate and store consumption rates (is provided with mechanism to calculate and store consumption rate, col. 10, lines 41-50 and element 214, Fig. 2), predict unmetered uses from previous recordings (remote detection of theft of utility, col. 11, lines 61-67, col. 12, lines 1-13) and establish normal consumption pattern (establishing satisfactory consumption thresholds, col. 11, lines 10-47).

Regarding claim 47, Argyroudis discloses the remotely interactive metering system according to claim 46, wherein the meter reading collection hub can report deviations from normal consumption patterns (utility usage below or beyond thresholds, col. 11, lines 10-47).

Regarding claim 48, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the metering reading collection hub (a combined system of elements 132, 134, 122, 136, 118, 104, 106, 108, 110, 102a-102n, Fig. 1) is connected to the centralized meter reading server by the PSTN network (is connected to the central server via the PSTN network, Fig. 1).

Regarding claim 49, Argyroudis discloses the remotely interactive metering system according to claim 48, wherein the meter reading collection hub (HBU 122 of the collection hub, Fig. 1) is connected to the PSTN network by the telephone line of the household (is connected to the PSTN via the land-line communication link 126, col. 6, lines 34-40) served by the meter reading collection hub.

Regarding claim 50, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the meter reading collection hub (a combined system of elements 132, 134, 122, 136, 118, 104, 106, 108, 110, 102a-102n, Fig. 1) is connected to the centralized meter reading server (is connected to central controller 116, Fig. 1) via terrestrial or satellite GSM signaling mechanisms (via TDMA signaling mechanism, col. 5, lines 54-58).

Regarding claim 52, Argyroudis discloses the remotely interactive metering system according to claim 48, wherein the telecommunication mechanism operates as a meter server with auto-dial to a specified telephone number.

Regarding claim 55, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the communication mechanism by which the meter reading collection hub receives real-time signals, comprises a radio receiver (the remote metering unit of the collection hub comprises a radio receiver 218, Fig. 2).

Regarding claim 58, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the real-time time signal is used to synchronize communications of data between the meter reading collection hubs and a centralized meter reading server (fault condition message is transmitted from the remote metering unit to the central controller, col. 11, lines 48-60).

Regarding claim 59, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the real-time time signal is used for switching unit rates (real-time pricing information, col. 6, lines 50-54).

Regarding claim 61, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the meter reading collection hub has non-volatile storage media

(the remote metering unit of the collection hub has non-volatile memory 240, col. 10, lines 45-50, Fig. 2).

Regarding claim 62, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the meter reading collection hub can report the occurrence and duration of power cuts (occurrence of a blackout, col. 11, lines 29-47).

Regarding claim 63, Argyroudis discloses the remotely interactive metering system according to claim 33, for use in connection with meters for utilities, electricity, gas and water, or for other metered commodities (water, gas, or electricity utility, col. 4, lines 35-42), for example fuel, vending machines or taxi services.

Regarding claim 64, Argyroudis discloses the remotely interactive metering system substantially as described herein, with reference to and as shown in Figs. 1 and 2 of the accompanying drawings (col. 3, lines 7-67 and col. 4, lines 1-12 and Figs 1 and 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Argyroudis in view of Swanson (USP 5,293,115).

Regarding claim 36, Argyroudis discloses all the aspects of the claimed invention set forth in the rejection of claim 33 above, except fails to disclose the remotely interactive metering system according to claim 33, wherein the sensing mechanism is located externally of the meter. However, Swanson discloses a method and system for providing a control circuitry having an optical sensor unit situated externally of a utility meter. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing mechanism of the remote metering unit of Argyroudis with the teaching of Swanson such that the sensing mechanism of Argyroudis is located externally of the meter such as the one taught by Swanson. The motivation to do so is to detect the presence or absence of the meter connection plug by using the external sensor unit external to the meter

8. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Argyroudis in view of Giles (USP 5,874,732).

Regarding claim 40, Argyroudis discloses all the aspects of the claimed invention set forth in the rejection of claim 35 above, except fails to disclose the remotely interactive metering

system according to claim 35, wherein the sensor mechanism includes a way for detecting the direction of rotation and jitteriness of a rotating disc of the meter. However, Giles discloses a method and apparatus for detecting the direction of rotation and jitteriness of a rotating disk of a sensor (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing mechanism of the remote metering unit of Argyroudis with the teaching of Giles such that the sensing mechanism of Argyroudis would include a way for detecting the direction of rotation and jitteriness of a rotating disc of the meter. The motivation to do so is to detect false counts caused by jitter or changes in the ambient light level.

9. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Argyroudis in view of Gorsuch et al. (USP 6,388,999).

Regarding claim 51, Argyroudis discloses the remotely interactive metering system according to claim 33, wherein the meter reading collection hub is connected to the centralized meter reading server via Internet/PSTN/terrestrial (the collection hub comprising elements 132, 134, 122, 136, 118, 104, 106, 108, 110, 102a-102n is connected to the central controller via the PSTN, Fig. 1) or satellite (GSM) signaling mechanisms, except fails to disclose the meter reading collection hub is running TCP/IP. However, Gorsuch discloses a method and system for connecting a base station to an Ethernet network using TCP/IP (col. 4, lines 55-67 and col. 5, lines 1-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing mechanism of the remote metering unit of Argyroudis with the teaching of Gorsuch such that the meter reading collection hub of

Argyroudis is running TCP/IP. The motivation to do so is to allow a base station to communicate with an Ethernet network such as the Internet.

10. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Argyroudis in view of Terpening et al. (USP 6,044,158).

Regarding claim 53, Argyroudis discloses all the aspects of the claimed invention set forth in the rejection of claim 48 above, except fails to disclose the remotely interactive metering system according to claim 48, wherein the telecommunication mechanism operates as a meter server with auto-answering on a specific count of telephone rings. However, Terpening discloses a communication apparatus performing an auto-answering task after a predetermined number of rings is not answered (col. 4, lines 25-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing mechanism of the remote metering unit of Argyroudis with the teaching of Terpening such that the telecommunication mechanism of Argyroudis operates as a meter server with auto-answering on a specific count of telephone rings. The motivation to do so is to secure data over the phone line in an unattended mode.

11. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Argyroudis in view of Nendell et al. (US Publication 2002/0133704).

Regarding claim 54, Argyroudis discloses all the aspects of the claimed invention set forth in the rejection of claim 33 above, except fails to disclose the remotely interactive metering system according to claim 33, wherein the telecommunication mechanism is password protected.

However, Nendell discloses a password-protected communication network (paragraph 0010).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing mechanism of the remote metering unit of Argyroudis with the teaching of Terpening such that the telecommunication mechanism of Argyroudis is password protected. The motivation to do so is to maintain the security of electronic information by identifying the users of the networks and the recipients of information.

12. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Argyroudis in view of Noone et al. (GB 2303943).

Regarding claim 56, Argyroudis discloses all the aspects of the claimed invention set forth in the rejection of claim 55 above, except fails to disclose the remotely interactive metering system according to claim 55, wherein the communication mechanism receives real-time time signals such as "Radio 4" or the "Rugby Signaling System." However, Noone discloses a public lighting control unit in which real-time Rugby signals are being used for controlling public lighting (page 2, lines 22-27, page 3, lines 1-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing mechanism of the remote metering unit of Argyroudis with the teaching of Noone such that the communication mechanism of Argyroudis receives real-time "Rugby" time signals. The motivation to do so is to avoid resetting circuits after a power failure.

13. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Argyroudis in view of Martin (GB 2282283).

Regarding claim 57, Argyroudis discloses all the aspects of the claimed invention set forth in the rejection of claim 33 above, except fails to disclose the remotely interactive metering system according to claim 33, wherein the communication mechanism receives Economy 7 signals (page 1, lines 9-17). However, Martin discloses a switch with a detector to sense a power failure by operating on Economy-7 systems. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing mechanism of the remote metering unit of Argyroudis with the teaching of Martin such that the communication mechanism of Argyroudis receives Economy 7 signals. The motivation to do so is to allow the remote metering units of Argyroudis to maintain their state upon conditions of power supply failure.

14. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Argyroudis in view of Coppola et al. (USP 5,216,357).

Regarding claim 60, Argyroudis discloses all the aspects of the claimed invention set forth in the rejection of claim 33 above, except fails to disclose the remotely interactive metering system according to claim 33, wherein the meter reading collection hub has back-up battery mechanism. However, Coppola discloses an electricity meter register with a back-up battery (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing mechanism of the remote metering unit of Argyroudis with the teaching of Coppola such that the meter reading collection hub has back-up

Art Unit: 2664

battery mechanism. The motivation to do so is to make sure an external real time clock being powered by a backup battery will measure the real time elapsed during a power outage so that no customer billing data is lost during the outage.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'W. Chin', with a long horizontal line extending to the right.

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER